

REMARKS/DISCUSSION OF ISSUES

Claims 5, 8-9, 11-13, 15-18 and 21-26 remain pending in the application.

The Examiner is once again respectfully requested to state whether the drawings are acceptable.

A new Office Action is respectfully requested, and reexamination and reconsideration of the present application, are respectfully requested in view of the following remarks.

REQUEST FOR NEW OFFICE ACTION

Among other things, the Office Action fails to substantively examine claims 8, 11-13, 15, and 16.

For example, claims 12, 13, 15 and 16 all include a feature wherein at least two of the secondary windings are electrically separated from each other. There is no mention of this feature anywhere in the Office Action. It is impossible to examine claims 12, 13, 15 and 16 without considering this feature and, at a minimum, at least facially claim that this feature is disclosed somewhere in at least one of the references that has been cited against these claims.

Similarly, with respect to claim 8, the Office Action fails to even acknowledge the recited feature that "the secondary windings are connected to the outputs by way of one diode and one output filter each." Also, with respect to claim 11, the Office Action makes absolutely no mention whatsoever of the recited means for deriving from each of the multiple outputs a measuring signal for regulating an output voltage of the inverter.

Accordingly, claims 8, 11-13, 15, and 16 having not been properly examined on their merits, Applicants respectfully request a new Office Action that examines all of the pending claims in this application.

35 U.S.C. § 102 & 103

The Office Action rejects: claims 9, 16, and 23-24 under 35 U.S.C. § 102 over Schlecht U.S. Patent 6,222,742 ("Schlecht"); claims 5, 11-13, 17-18 and 25-26 under 35 U.S.C. § 103 over Nguyen et al. U.S. Patent 4,651,267 ("Nguyen") in view of Jones U.S. Patent 4,533,986 ("Jones") and Suzuji et al. U.S. Patent 4,980,811

("Suzuji"); and claims 8, 15 and 21-22 over Nguyen in view of Suzuji and further in view of Lopez et al. U.S. Patent 5,654,879 ("Lopez")

Applicants respectfully traverse all of these rejections for at least the following reasons.

Claim 5

At the outset, claim 5 is directed to a resonant converter, while FIG. 4 of Nguyen shows an inverter.

Among other things, the resonant converter of claim 5 includes a transformer with a primary winding and at least two secondary windings of different winding directions.

The Office Action does not cite anything in Nguyen that discloses such a feature. Moreover, the undersigned attorney believes that such a feature is contrary to FIG. 4 of Nguyen, cited by the Examiner.

Indeed, as best understood by the undersigned attorney, both of the secondary windings 20b and 20c in FIG. 4 of Nguyen have a same winding direction which is opposite to the winding direction of the primary winding 20a. Thus, during the first half cycle when T1 conducts, current flows through winding 20b from the non-dot side of the winding to the dot side of the winding, while current flows in the opposite direction through primary winding 20a - from the dot side of the winding to the non-dot side. Meanwhile, during the second half-cycle when T2 conducts, current flows through winding 20c from the dot side of the winding to the non-dot side of the winding, while, once again, current flows in the opposite direction through primary winding 20a - from the non-dot side of the winding to the dot side. Therefore, it follows since windings 20b and 20c are both wound opposite to the winding direction of the primary winding 20a, they must be wound in the same direction as each other.

The Office Action does not cite anything in Jones or Suzuji as allegedly disclosing any such feature, nor does it cite any motivation in either Jones or Suzuji for modifying Nguyen to include such a feature.

Furthermore, in the resonant converter of claim 5, the resonant frequency is

determined by, among other things, the main and leakage inductances of the transformer.

The Office Action fails to cite anything in Nguyen, Jones or Suzuji as allegedly disclosing any such feature, nor does it cite any motivation in either Jones or Suzuji for modifying Nguyen to include such a feature. Meanwhile, Nguyen teaches that the resonant frequency of the inverter of FIG. 4 is set by the inductor L and the capacitor C (col. 6, 47-48), not any inductances of the transformer.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 5 is patentable over any proper combination of Nguyen, Jones and Suzuji.

Claims 11-13, 17-18 and 25-26

Claims 11-13, 17-18 and 25-26 depend from claim 5 and are deemed patentable over Nguyen, Jones and Suzuji for at least the reasons set for the above with respect to claim 5, and for the following additional reasons.

Claim 11

Among other things, the resonant converter of claim 11 includes means for deriving from each of the multiple outputs a measuring signal for regulating an output voltage of the inverter. The Office Action fails to even mention such a feature. No such feature appears in Nguyen, nor has the Office Action cited anything that would have motivated someone of skill in the art at the time the invention was made to modify Nguyen to include such a feature.

Accordingly, for at least this additional reason, Applicants respectfully submit that claim 11 is patentable over any proper combination of Nguyen, Jones and Suzuji.

Claims 12 and 13

Among other things, in the resonant converters of claims 12 and 13, at least two of the secondary windings are electrically separated from each other. The Office Action fails to even mention such a feature. No such feature appears in Nguyen, nor has the Office Action cited anything that would have motivated someone of skill in the art at the time the invention was made to modify Nguyen to include such a feature.

Accordingly, for at least this additional reason, Applicants respectfully submit that claims 12 and 13 are patentable over any proper combination of Nguyen, Jones and Suzuji.

Claim 8

Among other things, in the resonant converter of claim 8, secondary windings of the transformer are connected to the converter outputs by way of one diode and one output filter each.

The Office Action makes no mention of this feature, and does not cite anything in Nguyen that supposedly teaches such a feature. Indeed, it is very clear from inspection that FIG. 4 of Nguyen, cited in the Office Action, does not include any such feature. The Office Action also fails to cite anything in Nguyen, Lopez or Suzuji as allegedly disclosing any such feature, nor does it cite any motivation in either Lopez or Suzuji for modifying Nguyen to include such a feature.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 8 is patentable over any proper combination of Nguyen, Lopez and Suzuji.

Claims 15 and 21-22

Claims 15 and 21-22 depend from claim 8 and are deemed patentable over Nguyen, Lopez and Suzuji for at least the reasons set for the above with respect to claim 8, and for the following additional reasons.

Claim 15

Among other things, the resonant converter of claim 15 includes means for deriving from each of the multiple outputs a measuring signal for regulating an output voltage of the inverter. The Office Action fails to even mention such a feature. No such feature appears in Nguyen, nor has the Office Action cited anything that would have motivated someone of skill in the art at the time the invention was made to modify Nguyen to include such a feature.

Accordingly, for at least this additional reason, Applicants respectfully submit that claim 15 is patentable over any proper combination of Nguyen, Lopez and Suzuji.

Claim 9

Among other things, in the resonant converter of claim 9, different ratios of output voltage to number of turns are provided in respect of associated secondary windings having different winding directions.

Schlecht does not disclose any such feature.

The Office Action states that Schlecht discloses "different output ratio," citing col. 12, line 60 – col. 7, line 5. It is unclear exactly what is meant by this. Schlecht does disclose that the two secondary windings may have different turn ratios with respect to the primary winding. However, the cited text in Schlecht does **not** disclose that the two secondary windings have different ratios between the output voltage and the number of turns. Indeed, the cited text specifically discloses that if the output voltage of the two secondary windings should be the same (e.g., 12 volts), then the two secondary windings should have the same number of turns. That is, the cited text discloses that the two secondary windings have the same ratios between the output voltage and the number of turns. Meanwhile, the present specification discloses at page 5, lines 1-31 an exemplary embodiment with respect to FIGs. 5-7 where the ratio of the output voltage (V_{out}) to the number of turns (n) - that is V_{out}/N - can be made to be different for the two secondary windings by varying the duty cycle of the AC voltage supplied by the inverter 2.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 9 is patentable over Schlecht.

Claims 16 and 23-24

Claims 16 and 23-24 depend from claim 9 and are deemed patentable over Schlecht for at least the reasons set for the above with respect to claim 9, and for the following additional reasons.

Claim 16

Among other things, in the resonant converter of claim 16 at least two of the secondary windings are electrically separated from each other. The Office Action fails to even mention such a feature. No such feature appears in Schlecht.

Accordingly, for at least this additional reason, Applicants respectfully submit

that claim 16 is patentable over Schlecht.

DOUBLE PATENTING REJECTION

The Office Action also rejects all of the pending claims on the basis of the judicially created doctrine of double patenting over U.S. Patent 6,721,191 which issued from the very same parent application from which this application claims priority.

Applicants will consider filing an appropriate Terminal Disclaimer after the application is otherwise in condition for allowance such that no further claim amendments are to be entered with respect to the application.

CONCLUSION

In view of the foregoing explanations, Applicants respectfully request that the Examiner reconsider and reexamine the present application, allow claims 5, 8-9, 11-13, 15-18 and 21-26, and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (571) 283.0720 to discuss these matters.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment (except for the issue fee) to Deposit Account No. 50-0238 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees.

Respectfully submitted,

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